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	U.S. PATENT DOCUMENTS				
Document Number	Issue Date	Name	Class	Sub Class	Filing Date If Appropriate
5,670,361	9/23/97	Wong-Staal et al.	435	240.2	
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FOREIGN PATENT DOCUMENTS						
	Document Number	Publication Date	Country	Class	Sub Class	Translation Yes or No
OMB	WO 94/00012	Jan. 6, 1994	WIPO			
aths	WO 96/22368	Jul. 25, 1996	WIPO			4-4-3-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4

	OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)
aths	Adachi, et al, "Production of Acquired Immunodeficiency Syndrome-Associated Retrovirus in Human and Nonhuman Cells Transfected with an Infectious Molecular Clone," <i>Journal of Virology</i> , 59(1): 284-291 (1986).
(.	Adeniyi-Jones, et al, "Generation of Long Read-Through Transcripts in vivo and in vitro by Deletion of 3' Termination and Processing Sequences in the Human tRNA; met Gene," Nucleic Acids Res., 12: 1101-1115 (1984).
	Agrawal et al., Molecular Medicine Today, 6: 72-81 (2000).
	Anderson, Nature, 392: 25-30 (1998).
	Arnold, et al, "The Human tRNA ^{val} Gene Family: Organization, Nucleotide Sequences and Homologous Transcription of Three Single-Copy Genes," Gene, 44: 287-297 (1986).
	Arts, et al., "Identification of a Nuclear Export Receptor for tRNA," Curr. Biol., 8: 305-314 (1998).
	Bertrand, et al. "Can Hammerhead Ribozymes be Efficient Tools to Inactivate Gene Function?," Nucleic Acids Res., 22: 293-300 (1994).
	Bertrand, et al., "Anti-HIV Therapeutic Hammerhead Ribozymes: Targeting Strategies and Optimization of Intracellular Function," in Nucleic Acids Molecular Biology: Catalytic RNA 310-313 (Eckstein and Lilley eds., 1996).
	Bertrand, et al., "The Expression Cassette Determines the Functional Activity of Ribozymes in Mammalian Cells by Controlling their Intracellular Localization," RNA, 3: 75-88 (1997).
	Boelens, et al., "Nuclear Retention of RNA as a Mechanism for Localization," RNA, 1(3): 273-283 (1995).
V	Branch, <i>TIBS</i> , 23: 45-50 (1998).

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Applicant	Kazunari TAIRA et al.		
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atts	OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) Cotten, et al, "Ribozyme Mediated Destruction of RNA in vivo," The EMBO Journal, 8(12): 3861-3866 (1989).
	Dahm, et al., "Role of Divalent Metal Ions in the Hammerhead RNA Cleavage Reaction," Biochemistry, 30(39): 9464-9469 (1991).
	Dahm, et al, "Evidence for the Role of Solvated Metal Hydroxide in the Hammerhead Cleavage Mechanism," Biochemistry, 32 (48): 13040-13045 (1993).
	Domi et al., "Transcripts Containing A Small Anti-HIV Hammerhead Ribozyme That Are Active In The Cell Cytoplasm But Inactive In Vitro As Free mRNAs," Biochimie, 78: 654-662, 1996.
	Dropulić, et al., "Functional Characterization of a U5 Ribozyme: Intracellular Suppression of Human Immunodeficiency Virus Type 1 Expression," Journal of Virology, 66(3): 1432-1441 (1992)
	European Search Report for Application No. 99940588.9, mailed October 21, 2002.
	Ferbeyre, et al, "Cell Cycle Arrest Promotes trans-Hammerhead Ribozyme Action in Yeast," The Journal of Biological Chemistry, 271(32):19318-19323 (1996).
	Fujita, et al, "Discrimination of a Single Base Change in a Ribozyme Using the Gene for Dihydrofolate Reductase as a Selective Marker in Escherichia coli," Proceedings of the National Academy of Sciences, 94(2): 391-196 (1997).
	Gebhard, et al, "Use of a Nonviral Vector to Express a Chimeric tRNA-Ribozyme Against Lymphocytic Choriomeningitis Virus: Cytoplasmic Accumulation of a Catalytically Competent Transcript but Minimal Antiviral Effect," <i>Antisense & Nucleic Acid Drug Development</i> , 7(1): 3-11 (1997).
	Good, et al., "Expression of Small, Therapeutic RNAs in Human Cell Nuclei," Gene Therapy, 4(1): 45-54 (1997).
	Green, et al., J. Am Coll. Surg., 191(1): 93-105 (2000).
	Guerrier-Takada, et al., "The RNA Moiety of Ribonuclease P is the Catalytic Subunit of the Enzyme," Cell, 35(3): 849-857 (1983).
	Hamblet, et al., "Mitochondrial DNA Deletion Analysis: A Comparison of PCR Quantitative Methods," Biochemical and Biophysical Research Communications, 207(2): 839-847 (1995).
	Haseloff et al., "Simple RNA Enzymes with New and Highly Specific Endoribonuclease Activities," Nature, 334(6183): 585-591 (1988).
	Homann et al., "Incorporation Of The Catalytic Domain Of A Hammerhead Ribozyme Into Antisense RNA Enhances Its Inhibitory Effect On The Replication Of Human Immunodeficiency Virus Type 1," Nucleic Acids Research, 21: 2809-2814, 1993.
	Huang, et al., "Role of Polyadenylation in Nucleocytoplasmic Transport of mRNA," Molecular and Cellular Biology, 16(4): 1534-1542 (1996).
Y	Inokuchi, et al., "A Hammerhead Ribozyme Inhibits the Proliferation of an RNA Coliphage SP in Escherichia coli," The Journal of Biological Chemistry, 269(15): 11361-11366 (1994).

Atty. Docket No.	04853.0059-01000	Serial No.	To Be Assigned
Applicant	Kazunari TAIRA et al.		
Filing Date	April 9, 2004	Prior Group:	1635

Oths	Ilves, et al., "Retroviral Vectors Designed for Targeted Expression of RNA Polymerase III-Driven Transcripts: A Comparative Study," Gene, 171(2): 203-208 (1996).	
	Jen, et al., Stem Cells, 18: 307-319 (2000).	
	Jennings, et al., "Inhibition of SV40 Replicon Function by Engineered Antisense RNA Transcribed by RNA Polymerase III," The EMBO Journal, 6(10): 3043-3047 (1987).	
	Kawasaki, et al, "Selection of the Best Target Site for Ribozyme-Mediated Cleavage Within a Fusion Gene for Adenovirus E1A-Associated 300 kDa Protein (p300) and Luciferase," Nucleic Acids Research, 24(15): 3010-1016 (1996).	
	Kawasaki, et al., "Distinct Roles of the Co-Activators p300 and CBP in Retinoic-Acid-Induced F9-Cell Differentiation," Nature, 393: 284-289 (1998).	
	Kruger, et al., "Self-Splicing RNA: Autoexcision and Autocyclization of the Ribosomal RNA Intervening Sequence of Tetrahymena," Cell, 31(1): 147-157 (1982).	
	Lott, et al., "A Two-Metal Ion Mechanism Operates in the Hammerhead Ribozyme-Mediated Cleavage of an RNA Substrate," <i>Proceedings of the National Academy of Sciences</i> , 95(2): 542-547 (1998).	
	Ohkawa, et al., "Importance of Independence in Ribozyme Reactions: Kinetic Behavior of Trimmed and of Simply Connected Multiple Ribozymes with Potential Activity Against Human Immunodeficiency Virus," <i>Proceedings of the National Academy of Sciences</i> , 90(23): 11302-11308 (1993).	
	Ojwang, et al., "Inhibition of Human Immunodeficiency Virus Type 1 Expression by a Hairpin Ribozyme," Proceedings of the National Academy of Sciences, 89(22): 10802-10806 (1992).	
	Ozawa, et al., "Quantitative Determination of Deleted Mitochondrial DNA Relative to Normal DNA in Parkinsonian Striatum by a Kinetic PCR Analysis," Biochemical and Biophysical Research Communications," 172(2): 483-489 (1990).	
	Perriman, et al., "Effective Ribozyme Delivery in Plant Cells," Proceedings of the National Academy of Sciences," 92(13): 6175-6179 (1995).	
	Pontius, et al., "Observations on Catalysis by Hammerhead Ribozymes are Consistent with a Two Divalent-Metal-Ion Mechanism," Proceedings of the National Academy of Sciences, 94(6): 2290-2294 (1997).	
	Prislei, et al., "Use of Adenoviral VAI Small RNA as a Carrier for Cytoplasmic Delivery of Ribozymes," RNA, 3(6): 677-687 (1997).	
	Rossi, et al., "RNA Enzymes (Ribozymes) as Antiviral Therapeutic Agents," Trends in Biotechnology, 8: 179-183 (1990).	
	Rossi et al., "Ribozymes as Anti-HIV-1 Therapeutic Agents: Principles, Applications, And Problems," AIDS Research and Human Retroviruses, 8: 183-189, 1992.	
<i>Y</i>	Rossi, "Controlled, Targeted, Intracellular Expression of Ribozymes: Progress and Problems," Trends in Biotechnology, 13: 301-306 (1995).	

Atty. Docket No.	04853.0059-01000	Serial No.	To Be Assigned
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Filing Date	April 9, 2004	Prior Group:	1635

	OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)
Outrs	Sakamoto et al., "Intracellular Cleavage Of Hepatitis C Virus RNA And Inhibition of Viral Protein Translation By Hammerhead Ribozymes," J. Clin. Invest., 98: 2720-2728, 1996.
Oths	Sarver, et al., "Ribozymes as Potential Anti-HIV-1 Therapeutic Agents," Science, 247: 1222-1225 (1990).
	Shimada, et al., "Targeted and Highly Efficient Gene Transfer into CD4 Cells by a Recombinant Human Immunodeficiency Virus Retroviral Vector," Journal of Clinical Investigations, 88: 1043-1047 (1991).
	Smith, et al., "Transfer RNA in Retriculocyte Maturation," Biochemica et Biophsica Acta, 655(2): 195-198 (1981).
	Sullenger, et al., "Expression of Chimeric tRNA-Driven Antisense Transcripts Renders NIH 3T3 Cells Highly Resistant to Moloney Murine Leukemia Virus Replication," Molecular and Cellular Biology, 10(12): 6512-6523 (1990).
	Sullenger, et al., "Tethering Ribozymes to a Retroviral Packaging Signal for Destruction of Viral RNA," Science, 262: 1566-1569 (1993).
	Sun et al., "Ribozyme-Mediated Suppression of Moloney Murine Leukemia Virus And Human Immunodeficiency Virus Type I Replication In Permissive Cell Lines," <i>Proc. Natl. Acad. Sci. USA</i> , 91: 9715-9719, 1994.
	Taira, et al., "Construction of a Novel RNA-Transcript-Trimming Plasmid Which can be Used both in vitro in Place of Run-Off and (G)-Free Transcriptions and in vivo as Multi-Sequences Transcription Vectors," Nucleic Acids Research, 19(19): 5152-5130 (1991).
	Thomas, et al., "Site-Directed Mutagenesis by Gene Targeting in Mouse Embryo-Derived Stem Cells," Cell, 51(3): 503-512 (1987).
	Thompson, et al., "Improved Accumulation and Activity of Ribozymes Expressed from a tRNA-Based RNA Polymerase III Promoter," Nucleic Acids Research, 3(12): 2259-2268 (1995).
	Tobian et al., "tRNA Nuclear Transport: Defining the Critical Regions of Human tRNA, met by Point Mutagenesis," Cell, 43: 415-422 (1985).
	Uhlenbeck, "A Small Catalytic Oligoribonucleotide," Nature, 328 (6131): 596-600 (1987).
	Verma et al., Nature, 392: 25-30 (1998).
	Weerasinghe et al., "Resistance To Human Immunodeficiency Virus Type I (HIV-1) Infection In Human CD4+ Lymphocyte-Derived Cell Lines Conferred By Using Retroviral Vectors Expressing An HIV-1 RNA-Specific Ribozyme," J. Virol., 65: 5531-5534, 1991.
	Yamada, et al., "Activity and Cleavage Site Specificity of an Anti-HIV-1 Hairpin Ribozyme in Human T Cells," Virology, 205(1): 121-126 (1994).
<u>\</u>	Yamada, et al., "Intracellular Immunization of Human T Cells with a Hairpin Ribozyme Against Human Immunodeficiency Virus Type 1," Gene Therapy, 1(1): 38-45 (1994).

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	OTHER DOCUMENTS (Including Au	thor, Title, Date, Pertinent Pages, Etc.)	
atrs	Yates, et al., "A cis-Acting Element from the Epstein-Barr Viral Genome that Permits Stable Replication of Recombinant Plasmids in Latently Infected Cells," Proceedings of the National Academy of Sciences, 81(12): 3806-3810 (1984).		
	Yu, et al., "A Hairpin Ribozyme Inhibits Expression of Diverse Strains of Human Immunodeficience Virus Type 1," Proceedings of the National Academy of Sciences, 90(13): 6340-6344 (1993).		
	Zhao, et al., "Generating Loss-of-Fun Ribozyme in Drosophila," Nature, 365	ction Phenotypes of the fushi tarazu Gene with a Targeted 5(6445): 448-451 (1993).	
	Zhou, et al., "Ribozyme Mechanism Revisited: Evidence Against Direct Coordination of a Mg ²⁺ Ion with the pro-R Oxygen of the Scissile Phosphate in the Transition State of a Hammerhead Ribozyme-Catalyzed Reaction," Journal of the American Chemical Society, 118(37): 8969-8970 (1996).		
	Ion Effects on the Cleavage Rates of	ole-Metal-Ion Mechanism of Catalysis for the Differential Metal 5'-oxy and 5'-thio Substrates by a Hammerhead Ribozyme," of Sciences," 94(26): 14343-14348 (1997).	
\rangle \rangl	Zhou, et al., "The Hydrolysis of RNA: Ribozyme-Mediated Cleavage of RNA	From Theoretical Calculations to the Hammerhead A," Chemical Reviews, 98(3): 991-1026 (1998).	
Examiner ()	P0000	Date Considered 11519	
*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			
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